

## CLAIMS

What is claimed is:

1. A launching system for a roller coaster comprising:
  - a. a gripping conus;
  - 5 b. a connecting wire operably connected to the gripping conus; and
  - c. a drive means connected to the gripping conus via the connecting wire, wherein said drive means comprises:
    - i. a winch system;
    - 10 ii. a turning sheave; and
    - iii. a lifting cylinder removably connected to the connecting wire at its upper end and fixably mounted on a base.
2. The launching system of claim 2 further comprising
  - a. a tensioning cylinder connected to the turning sheave and the base and wherein the tensioning cylinder maintains constant tension on the connecting wire; and
  - 15 b. an accumulator connected to the lifting cylinder to maintain pressure in the tensioning cylinder at a constant value.
3. The launching system of claim 1, wherein the turning sheave is adapted to move in a specific direction to keep a constant tension on the connecting wire.
4. The launching system of claim 1, wherein the lifting cylinder is adapted to lift the  
20 connecting wire in a vertical direction.

5. The launching system of claim 1, wherein the gripping conus has a shape selected from the group consisting of conical, cylindrical, cubic and rectangular.
6. The launching system of claim 1, wherein the connecting wire is a belt with teeth.
7. A rollercoaster comprising a launching system, wherein the launching system connects temporarily to a roller cart that is moving on a track.
8. The rollercoaster of claim 7, wherein the rollercoaster comprises from about 1 to about 4 launching systems per track.
9. The rollercoaster of claim 7, wherein the launching system acts as an emergency brake for cart.
10. A method for launching rollercoaster carts comprising:
- a. pressurizing a plurality of hydraulic accumulators in a launching system;
  - b. bringing a connecting conus to its starting position;
  - c. lifting a connecting wire at its starting position;
  - d. connecting the connecting conus and a receiving conus;
  - e. energizing a hydraulic motor and speeding up a plurality of carts;
  - f. lowering the speed of the connection wire;
  - g. disconnecting the connecting conus and the receiving conus;
  - h. lowering the connecting wire;
  - i. returning connection conus to the starting position; and
  - j. bringing forward another plurality of carts.

11. A method for emergency braking of rollercoaster carts comprising:
- a. lifting up a connection wire;
  - b. bringing a connecting conus to its ending position;
  - c. moving the connecting conus to its starting position;
  - 5 d. matching speed of a plurality of carts and the connecting conus;
  - e. catching the plurality of carts;
  - f. lowering the speed of the plurality of carts by using a hydraulic motor as an hydraulic pump; and
  - g. stopping the plurality of carts.
- 10 12. A method for lowering the installed power of a rollercoaster launching system comprising:
- a. using a hydraulic pump of a winch system to pressurize a plurality of high pressure accumulators;
  - b. using the winch system to extend a cylinder of a booster system to its starting position and to move a connecting conus to its starting position;
  - 15 c. closing a valve between the booster system cylinder and the plurality of high pressure accumulators;
  - d. lifting a connection wire to its starting position;
  - e. connecting the connecting conus and a receiving box;
  - 20 f. opening the valve between a booster system cylinder and the plurality of high pressure accumulators;

- g. energizing a hydraulic motor and speeding up a plurality of carts;
- h. lowering the speed of the connection wire;
- i. disconnecting the connecting conus and the receiving box;
- j. lowering the connection wire;
- 5 k. returning the connection conus; and
- l. bringing forward another plurality of carts.